What Is Claimed Is:

1. A control method for a data transfer device that comprises:

a data receiver for receiving write data for a storage device;

a data control unit for transferring the write data received by the data receiver to the storage device; and

a data storage unit for storing serial data that is stored in a storage area of the storage device,

wherein:

the data control unit reads the serial data stored in the storage device in block units and stores this serial data in the data storage unit;

when, with respect to the received write data, a block in the storage area of the storage device constituting the write destination of the write data and the block in the storage area of the storage device that is stored in the data storage unit are the same, the data control unit updates data stored in the data storage unit corresponding with the storage-device storage location constituting the write destination of the write data by means of the write data; and

when, with respect to the received write data, a block

in a storage area of the storage device constituting the write destination of the write data and the block in the storage area of the storage device that is stored in the data storage unit are different, the data control unit generates security code based on the serial data stored in the data storage unit, adds the generated security code to the serial data stored in the data storage unit before transferring this serial data to the storage device, reads the serial data stored in the block in the storage area of the storage device constituting the write destination of the write data before storing this serial data in the data storage unit, and updates the data stored in the data storage unit corresponding with the storage-device storage location constituting the write destination of the write data by means of the write data.

2. The control method for the data transfer device according to claim 1, wherein the serial write data that is serially received by the data receiver is not necessarily written to successive areas of the block in the order in which this data is received.

3. A data transfer circuit, comprising:

a data receiver for receiving write data for a storage device;

a data control unit for transferring the write data received by the data receiver to the storage device; and

a data storage unit for storing serial data that is stored in a storage area of the storage device,

wherein:

the data control unit reads the serial data stored in the storage device in block units and stores this serial data in the data storage unit;

when, with respect to the received write data, a block in the storage area of the storage device constituting the write destination of the write data and the block in the storage area of the storage device that is stored in the data storage unit are the same, the data control unit updates data stored in the data storage unit corresponding with the storage-device storage location constituting the write destination of the write data by means of the write data; and

when, with respect to the received write data, a block in a storage area of the storage device constituting the write destination of the write data and the block in the storage area of the storage device that is stored in the data storage unit are different, the data control unit generates security code based on the serial data stored in the data storage unit, adds the generated security code to the serial data stored in the data storage unit before transferring this serial data to the

storage device, reads the serial data stored in the block in the storage area of the storage device constituting the write destination of the write data before storing this serial data in the data storage unit, and updates the data stored in the data storage unit corresponding with the storage-device storage location constituting the write destination of the write data by means of the write data.

4. The data transfer circuit according to claim 3, wherein the serial write data that is serially received by the data receiver is not necessarily written to successive areas of the block in the order in which this data is received.

5. A disk array device, comprising:

a host interface for receiving write data for a disk drive from an information processing device; and

a data controller that transfers the write data received by the host interface to the disk drive,

wherein:

the data controller comprises a data receiver for receiving write data for the disk drive from the host interface; a data control unit for transferring the write data received by the data receiver to the disk drive; and a data storage unit for storing serial data stored in the disk drive;

the data control unit reads the serial data stored in the disk drive in block units and then stores this serial data in the data storage unit;

when, with respect to the received write data, a block in the storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in the data storage unit are the same, the data control unit updates data stored in the data storage unit corresponding with the disk-drive storage location constituting the write destination of the write data by means of the write data; and

when, with respect to the received write data, a block in a storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in the data storage unit are different, the data control unit generates security code based on the serial data stored in the data storage unit, adds the generated security code to the serial data stored in the data storage unit before transferring this serial data to the disk drive, reads the serial data stored in the block in the storage area of the disk drive constituting the write destination of the write data before storing this serial data in the data storage unit, and updates the data stored in the data storage unit corresponding with the disk-drive storage location

constituting the write destination of the write data by means of the write data.

6. The disk array device according to claim 5, wherein the host interface is connected to the information processing device via a network; and the serial write data that is serially received by the host interface is not necessarily written to successive areas of the block in the order in which this data is received.

7. A disk array device, comprising:

a host interface for receiving write data for a disk drive from an information processing device;

a data controller that transfers the write data received by the host interface to the disk drive;

a processor for exercising overall control; and

memory for storing data,

wherein:

the processor reads the serial data stored in the disk drive in block units and stores this serial data in the memory;

when, with respect to the received write data, a block in the storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in the memory are the same,

the processor updates data stored in the memory corresponding with the disk-drive storage location constituting the write destination of the write data by means of the write data; and

when, with respect to the received write data, a block in a storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in the memory are different, the processor generates security code based on the serial data stored in the memory, adds the generated security code to the serial data stored in the memory before transferring this data to the disk drive, reads the serial data stored in the block in the storage area of the disk drive constituting the write destination of the write data before storing this serial data in the memory, and updates the data stored in the memory corresponding with the disk-drive storage location constituting the write destination of the write data by means of the write data.

8. A disk array device, comprising:

a channel control unit for receiving write data for a disk drive from an information processing device;

a disk control unit that performs processing relating to the writing of data for the disk drive; and

cache memory for storing data that is exchanged

between the channel control unit and the disk control unit,

wherein:

the channel control unit comprises a data receiver for receiving the write data; a data control unit for transferring the write data received by the data receiver to the cache memory; and a data storage unit for storing serial data stored in the storage area of the disk drive;

the data control unit reads the serial data stored in the disk drive in block units from the cache memory and then stores this serial data in the data storage unit;

when, with respect to the received write data, a block in the storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in the data storage unit are the same, the data control unit updates data stored in the data storage unit corresponding with the disk-drive storage location constituting the write destination of the write data by means of the write data; and

when, with respect to the received write data, a block in a storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in the data storage unit are different, the data control unit generates security code based on the serial data stored in the data storage unit, adds the

generated security code to the serial data stored in the data storage unit before transferring this serial data to the cache memory, reads the serial data stored in the block in the storage area of the disk drive constituting the write destination of the write data from the cache memory before storing this data in the data storage unit, and updates the data stored in the data storage unit corresponding with the disk-drive storage location constituting the write destination of the write data by means of the write data.

9. The disk array device according to claim 8, wherein the channel control unit comprises an interface, which is connected to the information processing device via a network and receives the write data;

the data receiver receives the write data from the interface; and

the serial write data that is serially received by the interface is not necessarily written to successive areas of the block in the order in which this data is received.

10. A disk array device, comprising:

a channel control unit for receiving write data for a disk drive from an information processing device;

a disk control unit that performs processing relating

to the writing of data for the disk drive; and

cache memory for storing data that is exchanged between the channel control unit and the disk control unit,

wherein:

the disk control unit comprises a data read unit, which reads the write data from the cache memory, a data control unit, which transfers the write data read by the data read unit to the disk drive; and a data storage unit for storing serial data stored in the storage area of the disk drive;

the data control unit reads the serial data stored in the disk drive in block units and then stores this serial data in the data storage unit;

when, with respect to the write data read from the cache memory, a block in the storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in the data storage unit are the same, the data control unit updates data stored in the data storage unit corresponding with the disk-drive storage location constituting the write destination of the write data by means of the write data; and

when, with respect to the write data read from the cache memory, a block in a storage area of the disk drive constituting the write destination of the write data and the block in the storage area of the disk drive that is stored in

the data storage unit are different, the data control unit generates security code based on the serial data stored in the data storage unit, adds the generated security code to the serial data stored in the data storage unit before transferring this serial data to the disk drive, reads the serial data stored in the block in the storage area of the disk drive constituting the write destination of the write data before storing this serial data in the data storage unit, and updates the data stored in the data storage unit corresponding with the disk-drive storage location constituting the write destination of the write data by means of the write data.